

INTERNATIONAL SEARCH REPORT

PCT/GB 03/01441

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H03L7/07 H03L7/085 H03L7/099 H03L7/087

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H03L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 33182 A (KONINKL PHILIPS ELECTRONICS NV ;PHILIPS SVENSKA AB (SE)) 1 July 1999 (1999-07-01) page 3, line 8 -page 10, line 1	1-22
X	US 5 790 614 A (POWELL WILLIAM E) 4 August 1998 (1998-08-04) column 9, line 1 -column 11, line 46	1-22
X	EP 1 104 111 A (LUCENT TECHNOLOGIES INC) 30 May 2001 (2001-05-30) column 4, line 30 -column 6, line 22	1-22
X	EP 0 698 968 A (DEUTSCHE TELEPHONWERK KABEL) 28 February 1996 (1996-02-28) column 2, line 10 -column 3, line 30	1-22
	--- -/--	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

16 October 2003

Date of mailing of the international search report

05. 11. 03

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Kahn, K-D

INTERNATIONAL SEARCH REPORT

PCT/GB 03/01441

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 18008 A (FRIEDRICH DIRK ;ROZMANN MICHAEL (DE); SIEMENS AG (DE)) 30 March 2000 (2000-03-30) the whole document	1
X	US 6 075 474 A (GABET PASCAL ET AL) 13 June 2000 (2000-06-13)	23
Y	the whole document	24-59
X	US 4 901 265 A (KERR RICHARD J ET AL) 13 February 1990 (1990-02-13)	23
Y	the whole document	24-59
Y	WO 94 26033 A (NOKIA TELECOMMUNICATIONS OY ;PELTOLA SEPPO (FI)) 10 November 1994 (1994-11-10) the whole document	24-59
X	EP 1 160 984 A (SANYO ELECTRIC CO ;TOKYO SANYO ELECTRIC CO (JP)) 5 December 2001 (2001-12-05) column 8, line 4 -column 8, line 51; figures 2,11	60-90
X	US 4 888 564 A (ISHIGAKI YUKINOBU) 19 December 1989 (1989-12-19) the whole document	60-90
X	EP 0 526 227 A (NIPPON ELECTRIC CO) 3 February 1993 (1993-02-03) the whole document	60-90

INTERNATIONAL SEARCH REPORT

PCT/GB 03/01441

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-22

Subject 1 claims a hybrid numeric-analog clock synchroniser for establishing a clock or carrier frequency locked to a timing reference.

2. Claims: 23 - 59

Subject 2 claims a high performance number-controlled oscillator for use as a NCO in the hybrid numeric-analog clock synchroniser defined in subject 1.

3. Claims: 60 - 90

Subject 3 claims a combined clock- and frame asynchrony detector for use as the second detector for the cascade form of the hybrid numeric-analog clock synchroniser defined in subject 1.

INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/GB 03/01441

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9933182	A	01-07-1999	EP 0962056 A1 WO 9933182 A2 JP 2001513974 T	08-12-1999 01-07-1999 04-09-2001
US 5790614	A	04-08-1998	AU 6339594 A CA 2125441 A1 CN 1137197 A EP 0630129 A2 JP 7143000 A US 5708687 A	15-12-1994 10-12-1994 04-12-1996 21-12-1994 02-06-1995 13-01-1998
EP 1104111	A	30-05-2001	US 6594330 B1 EP 1104111 A1 JP 2001177407 A	15-07-2003 30-05-2001 29-06-2001
EP 0698968	A	28-02-1996	DE 4431415 A1 AT 192612 T CZ 9502158 A3 DE 59508248 D1 EP 0698968 A1 FI 953991 A NO 953288 A SK 103495 A3	29-02-1996 15-05-2000 17-04-1996 08-06-2000 28-02-1996 25-02-1996 26-02-1996 08-05-1996
WO 0018008	A	30-03-2000	DE 19842711 A1 CA 2344192 A1 WO 0018008 A2 EP 1114539 A2 JP 2002525954 T US 2001017557 A1	30-03-2000 30-03-2000 30-03-2000 11-07-2001 13-08-2002 30-08-2001
US 6075474	A	13-06-2000	FR 2765419 A1 CA 2239581 A1 DE 69817270 D1 EP 0887941 A1 JP 11145828 A ZA 9805539 A	31-12-1998 27-12-1998 25-09-2003 30-12-1998 28-05-1999 01-02-1999
US 4901265	A	13-02-1990	AT 130946 T DE 3854744 D1 DE 3854744 T2 EP 0390868 A1 JP 2823913 B2 JP 4502092 T WO 8906009 A1	15-12-1995 11-01-1996 08-08-1996 10-10-1990 11-11-1998 09-04-1992 29-06-1989
WO 9426033	A	10-11-1994	FI 931991 A AU 678465 B2 AU 6570694 A DE 69419150 D1 DE 69419150 T2 DK 697151 T3 EP 0697151 A1 WO 9426033 A1 NZ 265297 A	04-11-1994 29-05-1997 21-11-1994 22-07-1999 18-11-1999 22-11-1999 21-02-1996 10-11-1994 28-05-1996
EP 1160984	A	05-12-2001	JP 11112334 A JP 11163722 A	23-04-1999 18-06-1999

INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/GB 03/01441

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1160984 A		EP 1160984 A2	05-12-2001
		EP 0907252 A2	07-04-1999
		JP 3281871 B2	13-05-2002
		JP 2000106525 A	11-04-2000
		US 6100767 A	08-08-2000
		JP 2000106524 A	11-04-2000
US 4888564 A	19-12-1989	JP 1123527 A	16-05-1989
		JP 2577933 B2	05-02-1997
		JP 1133420 A	25-05-1989
		JP 1133421 A	25-05-1989
		JP 2619663 B2	11-06-1997
EP 0526227 A	03-02-1993	JP 2993200 B2	20-12-1999
		JP 5037364 A	12-02-1993
		DE 69202531 D1	22-06-1995
		DE 69202531 T2	28-09-1995
		EP 0526227 A2	03-02-1993
		US 5315269 A	24-05-1994